

Notice of Allowability

Application No.

10/659,049

Examiner

Daniel R. Sellers

Applicant(s)

LITTLE, MAX ANDREW

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/26/06.
2. ☒ The allowed claim(s) is/are 1-12 and 14-18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 5-6, filed June 26, 2006, with respect to claims 1 and 16 have been fully considered and are persuasive. The rejections of claims 1-12 and 14-18 have been withdrawn.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the United Kingdom on 10th of March, 2001. It is noted, however, that applicant has not filed a certified copy of the 0105975.7 application as required by 35 U.S.C. 119(b).

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed Internationally on 6th of March, 2002. It is noted, however, that applicant has not filed a certified copy of the PCT/GB02/00987 application as required by 35 U.S.C. 119(b).

Allowable Subject Matter

4. Claims 1-12 and 14-18 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Regarding **claim 1**, prior art fails to teach or suggest the claimed audio bass enhancement method. Specifically, the combination of Werrbach, Cugnini, and admitted prior art fail to teach or suggest:

c) modifying the amplitude of the left and right low frequency signals to give modified left and right low frequency signals whereby signals with amplitude a where $0 < a < a_1$ are amplified by a first constant value C_1 , signals with amplitude $a_1 < a < a_2$ are amplified proportional to $1/a$, signals with amplitude $a = a_2$ are unchanged, signals with amplitude $a_2 < a < a_3$ are attenuated proportional to $1/a$, and signals with amplitude $a = a_3$ are attenuated by a second constant value C_2 ;

Werrbach teaches, as stated in the background of the application, a device that combines dynamically compressed bass frequencies with the original high frequency components of the original signal. Werrbach does not specifically teach step c, however Werrbach broadly teaches bass compression.

Cool Edit, Cool Edit 2000, newly cited art, Silfvast et al., USPN 5,524,060 and Townsend et al., USPN 6,606,388 (hereinafter Silfvast and Townsend), teach other prior art compression techniques, however they fail to teach or suggest a method with the feature mentioned above, wherein the left and right low frequency signals are created by bandpass filtering the left and right input signals, respectively.

Silfvast teaches a graphical user interface (gui) for dynamics management in a mixing console (abstract and Fig. 1). Silfvast teaches, much like Cool Edit, a user controlled compression and expansion apparatus, wherein methods to modify the dynamics of the signal are processed (Col. 3, line 25 - Col. 4, line 3, and Fig. 4, and 7b). Silfvast fails to teach a method, which employs the exact modification of the dynamics with at least the feature of step c in the applicants claimed invention. Both Silfvast and

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Cool Edit teaches an apparatus, with user intervention, which is capable of performing the method of claim 1, but they do not teach this specific feature of dynamic compression.

Townsend teaches bass enhancement by splitting the signal into low and high frequency components (see Fig. 1 and 2). Townsend teaches a variable transfer function, signal limiting, and resonant filtering to enhance a bass signal, however Townsend does not teach or suggest a method as claimed (Col. 4, lines 30-67)

There is no reasonable motivation to combine Werrbach and Cool Edit, which would result in an apparatus or method with all the features of claim 1. Likewise, there is no motivation to combine Werrbach and Silfvast. There simply is no teaching specifically stating that step c is desirable over the prior art's broader control of dynamics. Any combination created with Cool Edit and Silfvast would require undue experimentation by an operator to arrive at the claimed method.

Regarding **claim 16**, is allowable over prior art. The prior art does not teach a stereo dynamic compression method with these features. Werrbach teaches a single channel device, or a device that controls the left and right signals separately. The claim recites, "deriving a control signal from the left and right low frequency signals, the control signal determined based on the respective low frequency signal having the larger absolute magnitude at each time point." The claim also recites a similar compression technique as step c in claim 1. The prior art, as stated above, teaches broader ranges of compression than recited in the claim, and the prior art does not teach or suggest the specific routine.

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Regarding **claims 2-12, 14-15, and 17-18**, these claims are allowable due to their dependency on claims 1 or 16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRS


SINH TRAN
SUPERVISORY PATENT EXAMINER